Chapter 1 – Forms of Water (Water Cycle)

Kindergarten NGSS Standards met by this chapter:

Kindergarten – Interdependent Relationships in Ecosystems: Animals, Plants, and their Environment.

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans need to survive. *Water Cycle poster , Water Dance book*

K-ESS3-1 Use a model to represent the relationships between the needs of different plants or animals (including humans) and the places they live. *Siemens water cycle model & experiment*

Disciplinary Core

LS1.C: Organization for Matter and Energy Flow in Organisms. All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

Kindergarten – Weather and Climate

K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time. *Houses of Seasons*

K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface. *Siemens water cycle model & experiment*

Disciplinary Core

PS3.B: Conservation of Energy and Energy Transfer. Sunlight warms Earth Surface

ESS2.D: Weather and Climate. Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time.

Chapter 1 – Forms of Water (Water Cycle)

Second Grade NGSS Standards met by this chapter:

Second Grade – Earth's Systems: Processes that Shape the Earth

2-ESS1-1 Make observations from media to construct an evidence-based account that Earth events can occur quickly or slowly. *Houses of Seasons*

2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be a solid or liquid. *Blue Planet Balloon Toss (chapter 2); Siemens water cycle model & experiment; Water Dance book; Water Cycle Poster*

Disciplinary Core

ESS2.A: Earth Material and Systems. Wind and water can change the shape of the land.

ESS2.B: Plate Tectonics and Large-Scale System Interactions. Maps show where things are located. One can map the shapes and kinds of land and water in any area.

ESS2-C. The Roles of Water in Earth's Surface Process. Water is found in the ocean, rivers lakes, and ponds. Water exists as solid ice and in liquid form.

Second Grade – Structure and Properties of Matter

2-PS1-4 Construct an argument that some changes caused by heating or cooling can be reversed and some cannot. *Water Cycle*

Disciplinary Core

PS1.A: Structure and Properties of Matter. Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.

PS1.B: Chemical Reactions. Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.

Second Grade- Interdependent Relationships in Ecosystems

2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow. *Project Wet-Harvesting Water, transpiration trap (pgs. 12-13)*

Disciplinary Core

LS2.A: Interdependent Relationships in Ecosystems. Plants depend on water and light to grow.

Chapter 2 – Distribution of Water On Earth; Human need to survive

Kindergarten NGSS Standards met by this chapter:

Kindergarten – Interdependent Relationships in Ecosystems: Animals, Plants, and their Environment.

L-LS1-1 Use observations to describe patterns of what plans and animals (including humans) need to survive: *All the Water In The World; Project Wet- You're All Wet (pgs. 4&5), Attitudes and Latitudes (pgs. 6&7), Soak Up These Facts (pgs. 10&11)*

Disciplinary Core

ESS3.A: Natural Resources. Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.

Chapter 2 – Distribution of Water On Earth; Human need to survive

Second Grade NGSS Standards met by this chapter:

Second Grade – Earth's Systems: Processes that Shape the Earth

2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area: *Blue Planet Globe Toss*

2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be a solid or liquid: *Blue Planet Balloon Toss; All the Water in the World;*

Disciplinary Core Ideas

ESS2.A: Earth Materials and Systems – wind and water can change the shape of land.

ESS2.B: Plate Tectonics and Large-Scale System Interactions. Maps or globes (model) show where things are located. One can map the shapes and kinds of land and water in an area.

ESS2-C. The Roles of Water in Earth's Surface Process. Water is found in the ocean, rivers lakes, and ponds. Water exists as solid ice and in liquid form.

Chapter 3 - Groundwater and Watersheds

Kindergarten NGSS Standards met by this chapter:

Kindergarten – Interdependent Relationships in Ecosystems: Animals, Plants, and their Environment.

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans need to survive: *Project Wet- Important Waters (pgs. 3&4), Gathering Places (pgs 13&14), Looking for Spring Water (pgs 15&16)*

K-ESS3-1 Use a model to represent the relationships between the needs of different plants or animals (including humans) and the places they live: *Project Wet-Groundwater Model; Edible Earth Parfaits; Aluminum Watersheds; Watershed Mapping*

KESS2-2Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs: *Project Wet- Get The Groundwater Pictures (pgs 5&6), Healthy Watershed(pgs 11&12)*

K-ESS3-3Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment: *Where Does It Go? Watershed Mapping; Mapping activity of McHenry County*

Disciplinary Core Ideas

ESS3.C: Human Impacts on Earth Systems. Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air and living things.

ETS1.B: Developing Possible Solutions. Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solution.

Engineering Design

K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs: *Project Wet- What Is Groundwater?*

Chapter 3 - Groundwater and Watersheds

Second Grade NGSS Standards met by this chapter:

Second Grade – Earth's Systems: Processes that Shape the Earth

2-ESS1-1 Make observations from media to construct an evidence-based account that Earth events can occur quickly or slowly: *Project Wet-Get the Ground Water Picture (pgs.5&6); Earth Day Watershed Scavenger Hunt; School Yard Watershed Fundana; Aluminum Watersheds*

2-ESS2-2Develop a model to represent the shapes and kinds of land and bodies of water in an area: *Making A Watershed; Project Wet-Get the Groundwater Pictures (pgs 5&6), Groundwater Gotcha (pgs 7-10); Watershed Mapping Activity with County Maps.*

2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be a solid or liquid *Project Wet - What is Ground Water(pgs1&2), Important Waters (pgs3&4), Get the Groundwater Pictures (pgs 5&6), Groundwater Gotcha (pgs 7-10), Healthy Watersheds (pgs11&12); Watershed Scavenger Hunt with Fundana*

Disciplinary Core Ideas

ESS1.C The History of Planet Earth. Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe:

ESS2.B Plate Tectonics and Large-Scale System Interactions. Maps show where things are located. One can map the shapes and kinds of land and water in any area:

ESS2.C The Roles of Water in Earth's Surface Processes. Water is found in the ocean, rivers, lakes, and ponds. Project Wet: What is Ground Water?; Important Waters; Healthy Watersheds

2nd Grade Structure and Properties of Matter

2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties: *Project Wet- What is Ground Water?(pgs1&2), Get the Groundwater Picture (pgs 4&5)*

2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose: *Project Wet- What is Ground Water?(pgs1&2), Get the Groundwater Picture (pgs 4&5)*

Engineering Design

K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs: *Project Wet- What Is Groundwater?*

Chapter 4 – Water Usage & Conservation

Kindergarten NGSS Standards met by this chapter:

Kindergarten – Interdependent Relationships in Ecosystems: Animals, Plants, and their Environment.

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans need to survive: *Drink It Up;, Project Wet - Healthy Water For Healthy People, Water Quality Believe it Or Not; Waste Water Watcher*

K-ESS3-1 Use a model to represent the relationships between the needs of different plants or animals (including humans) and the places they live: *Project Wet- Soak Up These Facts, Wet Harvesting Water; Waste Water Watcher; Wise Use Water Patrol*

KESS2-2Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs: *Project Wet- Soak up These Facts; Waste Water Watcher; Wise Use Water Patrol*

K-ESS3-3Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment: *Waste Water Watcher; Wise Water Use Patrol; Project Wet- You Saved Water (pgs. 8&9), Be A Water Detective (pgs 14&15)*

Disciplinary Core Ideas

ESS3.C: Human Impacts on Earth Systems – Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water air, and other living things. Waste Water Watcher, Wise Water Use Patrol, Project Wet You Saved Water (pgs. 8&9), Be A Water Detective (pgs 14&15)

Kindergarten Weather and Climate

K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface: *Project Wet- Harvesting Water solar stills*

K-PS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to severe weather: *collecting rainwater or solar energy*

Disciplinary Core Ideas

PS3.B: Conservation of Energy and Energy Transfer. Sunlight warms Earth's Surface

ESS2.D: Weather and Climate. Weather is a combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time.

Chapter 4 – Water Usage & Conservation

Second Grade NGSS Standards met by this chapter:

Second Grade- Interdependent Relationships in Ecosystems

2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow: *Project Wet - Healthy Water for Healthy People; Drink it up!*

2-LS4-1 Make an observation of plants and animals to compare the diversity of life in different habitats: *Project Wet- Soak up these facts (pgs 10-11), Attitudes and Latitudes (pgs 6&7); Waste Water Watcher*

Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems. Plants depend on water and light to grow.

LS4.D:Biodiversity and Humans. There are many different kind of living things in any area

ETS1.B: Developing Possible Solutions. Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

K-2 Engineering Design

K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool: *Help the Environment – Saving Water; Exploring Earth's Resources – Using Water; Waste Water Watcher; Wise Water Use Patrol; Project Wet-Harvesting Water, You Saved Water (pgs. 8&9), Be A Water Detective (pgs 14&15)*

K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem: *Project Wet – Harvesting Water (pgs 12&13)*

Disciplinary Core Ideas

ETS1.B Developing Possible Solutions. Designs can be conveyed through sketches, drawings, or physical models. They representations are useful in communicating ideas for a problem's solution to other people.

Chapter 6 Best Management Practices in McHenry County – What you can do!

Kindergarten and Second Grade NGSS Standards met by this chapter:

All included pamphlets will shed light on what observable problems people in a community are trying to solve. These information pieces will encourage investigation, discussion, and hopefully citizen action. All standards come together to challenge students to Engineer and Design the "next steps" for water conservation success.

K-2 Engineering Design

K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define simple problems that can be solved the development of a new and improved object or tool.

K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

K-2-ETS1-3 Analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Pamphlets:

EPA Water Sense: Student and Family Pledge to filter out bad water habits

EPA Water Sense: Saving Water Saves Energy

Lawn Care: Water-Smart

Xeriscaping or Raingardening

Native Planting

After the Storm and Storm Drain Stenciling

McHenry County Stormwater Management Permits

Preparing your Lawn and Garden for Drought

McHenry County Wetland Regulations

McHenry County Agriculture Conservation Easement and Farmland Protection Program

McHenry County Household Hazardous Waste

McHenry County Stormwater Management Permits

McHenry County Water Conservation

McHenry County Residential Deicing

McHenry County Unused & Expired Medicines

School yard ideas:

Build a rain garden

Design a native planting area

Find out about your stormwater run off flow and how to mitigate human impacts.

Protect your storm water drains from pollutants

Host family recycling events for products that get misguided to landfills or water ways